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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,147	06/07/2006	Yoshihiro Akechi	JFE-06-1122	8833

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IP GROUP OF DLA PIPER US LLP
ONE LIBERTY PLACE
1650 MARKET ST, SUITE 4900
PHILADELPHIA, PA 19103

EXAMINER	
LEE, LESLIE A	

ART UNIT	PAPER NUMBER
3657	

MAIL DATE	DELIVERY MODE
04/21/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/582,147	AKECHI ET AL.	
	Examiner	Art Unit	
	LESLIE A. LEE	3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *35-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *35-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 35-36 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 63-128466U.

Re claim 35, JP 63-128466 U ('466) teaches: A lubricant-feed-state monitoring sensor that monitors the feed state of lubricant by detecting the supply of lubricant to a device fed with oily or fatty lubricant or a lubricant feed pipe that feeds lubricant to the device, comprising a T-shaped member (1, with bore 8, fig 1) having a lubricant passage (1a, fig 1) connected to the lubricant feed pipe and a detector insertion portion having a passageway (8, fig 1) and extending substantially vertically from a middle portion of the lubricant passage, into which passageway a detector (10, fig 1) is inserted; wherein the detector is disposed such that a first end portion of the detector is fixed to a top portion of the detector insertion portion (7, fig 1), a middle portion extends along the passageway and a second end portion is positioned in the lubricant passage without restraint, the detector undergoing bending deflection by displacement of the second end

portion due to the flow of the lubricant, and the detector having a piezoelectric element (12, fig 1) that generates voltage by the bending deflection.

> The use of the fluid flow meter of '466 is capable of measure fluid flow of any fluid, and is therefore capable of performing the intended use of metering lubricant flow. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Re claim 36, '466 teaches: wherein the detector further comprises a heat shrinkable film made of a flexible material that coats the piezoelectric element (resin mold 40, fig 5).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP63-128466 U, and further in view of Rafei.

Re claim 37, '466 teaches: A method of monitoring a feed state of lubricant to a device fed with lubricant with a sensor (10, fig 1) mounted to the device or a lubricant feed pipe connected to the device comprising: disposing the sensor to undergo bending deflection by lubricant flow when the lubricant is fed; converting strain generated by the sensor due to the bending deflection to an

electrical signal (15, fig 1), wherein the senor is a piezoelectric element (12, fig 1) that generates voltage by the bending deflection;

'466 does not teach: measuring peak voltage of the electrical signal by peak hold processing; and when the peak voltage is in a predetermined range, determining that the lubricant feed state is abnormal.

Rafei teaches monitor circuit (15, fig 1) which produces an alarm or shut down signal (136, fig 6a) when lubrication conditions based on a flow signal (22, fig 6a) from a flow monitor (20, fig 6a) and other condition signals falls outside acceptable operation parameters. It would have been obvious to one of ordinary skill in the art to apply the flow sensor cited in '466 to the monitor circuit system cited in Rafei because the flow sensor cited in '466 is an equivalent with the flow monitor cited in Rafei.

It would have been obvious to one of ordinary skill in the art to apply the signal processing and alarm method disclosed in '466 as modified by Rafei to a lubrication system because the flow sensor cited in '466 is capable of being applied to any type of flow system. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Re claim 38, '466 does not teach: wherein a lower threshold and an upper threshold are set for the peak voltage in advance; and when the peak voltage falls below the lower threshold, determining that the amount of lubricant has decreased or stopped, and when the peak voltage exceeds the upper threshold, determining that the part downstream from the sensor is clogged.

Rafei teaches monitor circuit (15, fig 1) which produces an alarm or shut down signal (136, fig 6a) when lubrication conditions based on a flow signal (22, fig 6a) from a flow monitor (20, fig 6a) and other condition signals falls outside acceptable operation parameters. It would have been obvious to one of ordinary skill in the art to apply the flow sensor cited in'466 to the monitor circuit system cited in Rafei because the flow sensor cited in '466 is an equivalent with the flow monitor cited in Rafei.

Re claim 39, '466 teaches: wherein, when the sensor is a piezoelectric element (12, fig 1),

'466 does not teach: capacitance of the sensor is measured after monitoring of the lubricant feed state has been started and when the capacitance of the sensor is less than a predetermined threshold, determining that the sensor is abnormal, and abnormality due to the abnormal sensor is removed from the determination on abnormality of feed state of lubricant based on the peak voltage, on the basis of the determination on the sensor abnormality.

Rafei teaches a monitor circuit (15, fig 1) which monitors the flow signal from a flow detector (20, fig 6a) which produces an alarm or shut down signal (136, fig 6a) when lubrication conditions based on a flow signal (22, fig 6a) and other condition signals falls outside acceptable operation parameters. This would necessarily be included when the flow detector of '466 is combined with the monitor circuit of Rafei, as discussed above. It would have been obvious to one of ordinary skill in the art to remove the abnormality due to the alarm signal cited in Rafei because it is inherent in the purpose of an alarm to address or remove the cause of the alarm.

Re claim 40, see the rejection of claim 39, above.

Response to Arguments

6. Applicant's arguments with respect to claims 35-40 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LESLIE A. LEE whose telephone number is (571)270-5927. The examiner can normally be reached on Monday - Thursday 9:00 - 6:30, Friday 9:00-5:00, with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571)272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. A. L./
Examiner, Art Unit 3657

/Robert A. Siconolfi/
Supervisory Patent Examiner, Art Unit 3657

April 15, 2009